

## **Specification**

Changes to the specification are shown in the enclosed marked up copies of pages 1 and 3 of the specification. The changes are:

Page 1, between lines 1 and 2, insert "Background of the Invention";  
between lines 9 and 10, insert "Summary of the Invention".

Page 3, between lines 5 and 6 insert "Brief Description of the Drawings";  
between lines 12 and 13, insert "Detailed Description of the Invention".



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## METHOD AND APPARATUS FOR PROCESSING ARTICLES

*Background of the Invention*

This invention relates to a method and apparatus for processing articles.

The background to the invention will be explained with respect to particular applications. The invention is not limited to these, however, and other applications may occur readily to the reader.

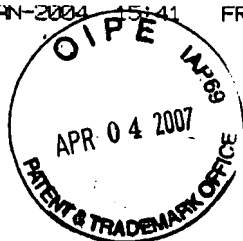
Some articles are spun to dry them, e.g. after washing. Examples are "prepared" leaf vegetables e.g. green salad vegetables. Conventionally, they are loaded into a "spin dryer" drum in batches, spun dry and then the batch is emptied from the drum. It would be advantageous to use a continuous process instead of a batch process.

*Summary of the Invention*

Against this background, the invention provides apparatus for processing articles, comprising a hollow drum having permeable walls, at one end an inlet for receiving articles onto an inside surface of the permeable walls; at the other end an outlet for discharging articles from the drum; means for rotating the drum about an axis having at least a horizontal component at such speed that centrifugal force acting on the articles is sufficient to overcome the gravity acting on the articles, and progressing means for applying a first jet of fluid to the articles through the permeable wall, to displace the articles from the inside surface and in a direction away from the inlet, towards the outlet.

In one application, the process is used to dry the articles. The speed of rotation of the drum may be chosen to suit the degree of drying required, and the displacement of the article by the jet of fluid may turn the article so that liquid which might otherwise lie trapped on an inward side of the article lying towards the centre of the drum, is repositioned outwardly away from the centre of the drum.

In another application the process is used to inspect the articles. In the preparation of leaf "prepared" vegetables, e.g. salads, spinach etc, the vegetables are inspected for blemishes and the presence of pests, e.g. caterpillars, slugs and insects. Inspection is difficult, for example leaves tend to stick together, pests tend to hide in folds in the leaves, and turning the leaves to view all surfaces is difficult and onerous



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- a hollow drum; rotating the drum about an axis having at least a horizontal component at such speed that centrifugal force acting on the articles is sufficient to overcome the force of gravity acting on the articles, and applying a first jet of fluid to the articles through the permeable wall, to displace the articles from the inside surface and in a direction away from the inlet.

#### *Brief Description of the Drawings*

One embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a schematic pictorial view of inspection apparatus embodying the invention;

- Figure 2 is an end view of the apparatus of Figure 1; and

Figures 3a and 3b show two views of a combined drying and two-stage inspection apparatus.

#### *Detailed Description of the Invention*

- Referring to the drawings, a hollow drum 2 has open ends 6 and 8 and permeable walls 10. The walls may, for example be a perforate sheet material or mesh. The drum 2 is supported at each end by four rollers 12 (shown only at one end in the drawings) at least one of which is driven so as to rotate the drum about an axis X-X which is or has at least a component which is horizontal. Generally the axis will be horizontal. The drum is driven at such a speed that articles, e.g. leaf vegetables, introduced at the end 8, constituting an inlet, and falling onto the inside surface of the walls 10 are, unless rejected, carried in a complete revolution round the drum as it rotates. That is the centrifugal force on the leaves is sufficient to overcome the force of gravity.

- As the leaves pass an inspection line 14, they are illuminated by light sources 16. The inspection line 14 is viewed by a line scan camera 18 which provides a pixel by pixel output to control means (not shown) which is operative to compare the output with predetermined criteria to determine whether an article is acceptable or should be rejected, e.g. to identify a blemish or pest on a leaf. The criteria may be based on colour or other physical or biological properties of the product under inspection.